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Lylea obclavata sp. nov. from Lushan Mountain, China

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Abstract—A new species, *Lylea obclavata*, is described and illustrated from a specimen collected on the dead branches of an unidentified plant in Lushan Mountain, China. The fungus is distinguished by its obclavate smooth (1–)2-distoseptate conidia produced in unbranched acropetal chains. A key and synoptic table to *Lylea* species are provided.

Key words—asexual fungi, hyphomycetes, conidial fungi, taxonomy

Introduction

Lylea Morgan-Jones, established by Morgan-Jones (1975) with *L. catenulata* as the type species, was characterized primarily by acrogenous catenate distoseptate conidia that secede schizolytically from monoblastic integrated terminal determinate conidiogenous cells. Morgan-Jones (1975) compared *Lylea* with several other genera including *Septonema* Corda, *Bispora* Corda, *Heteroconium* Petr., *Taeniolella* S. Hughes, *Ampullifera* Deighton, and *Xylohypha* (Fr.) E.W. Mason (Petrak 1949, Corda 1837, Hughes 1958, Deighton 1960) and separated *Lylea* based on its distoseptate conidia. Seifert & al. (2011) pointed out that *Lylea* is similar to *Rhexoprolifer* Matsush., *Pirozynskiella* S. Hughes, and *Repetoblastiella* R.F. Castañeda & al.

However, *Rhexoprolifer* has terminal and intercalary conidiogenous cells with euseptate conidia (Matsushima 1996), *Repetoblastiella* has euseptate conidia forming several irregular chains from several indeterminate cells across the length of the conidial body (Castañeda-Ruíz & al. 2010), and *Pirozynskiella* has euseptate conidia with the centrifugal (then interseptal) septal sequence following the first median septum (Hughes 2007).

Six species have been described within *Lylea: L. catenulata* Morgan-Jones, *L. ficus* J.W. Xia & X.G. Zhang, *L. indica* K.G. Karand. & S.K. Singh, *L. palmicola* Mercado & al., *L. rhopalostylidis* McKenzie, and *L. tetracoila* (Corda) Hol.-Jech. (Table 1). These species are distinguished primarily by conidial shape, size, septation, ornamentation, and unbranched or branched acropetal chains. A synoptic table of the morphological characters of *Lylea* species may also aid in species identification (Xia & al. 2014). Keys to species of *Lylea* have been provided by Holubová-Jechová (1978) and Mercado-Sierra & al. (1997).

During studies on saprophytic microfungi associated with plant debris in the forest ecosystems of southern China, an interesting species with catenate distoseptate conidia and monoblastic conidiogenous cells was collected on dead branches of an unidentified broadleaf tree. The specimen, which manifests the morphological characteristics typical of *Lylea*, differs from other described *Lylea* species in conidial morphology and size and is proposed as new to science.

Materials & methods

Samples of litter were placed in paper and plastic bags, taken to the laboratory, and prepared according to Castañeda-Ruíz & al. (2016). Mounts were prepared in PVL (polyvinyl alcohol and lactic acid) and measurements were made at a magnification of ×1000. Micrographs were obtained with a Nikon Eclipse 80i microscope equipped with bright field and Nomarski interference optics. The type specimen was deposited in the Herbarium of Jiangxi Agricultural University, Nanchang, Jiangxi, China (HJAUP).

Taxonomy

Lylea obclavata L. Qiu, Jian Ma, X.G. Zhang & R.F. Castañeda, **sp. nov.** Fig. 1

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Differs from *Lylea ficus* by its longer and narrower obclavate conidia with (1–)2 distosepta.

Type: China, Jiangxi Province, Lushan Mountain, on dead branches of an unidentified broadleaf tree, 8 November 2014, J. Ma (**Holotype**, HJAUP M0451).

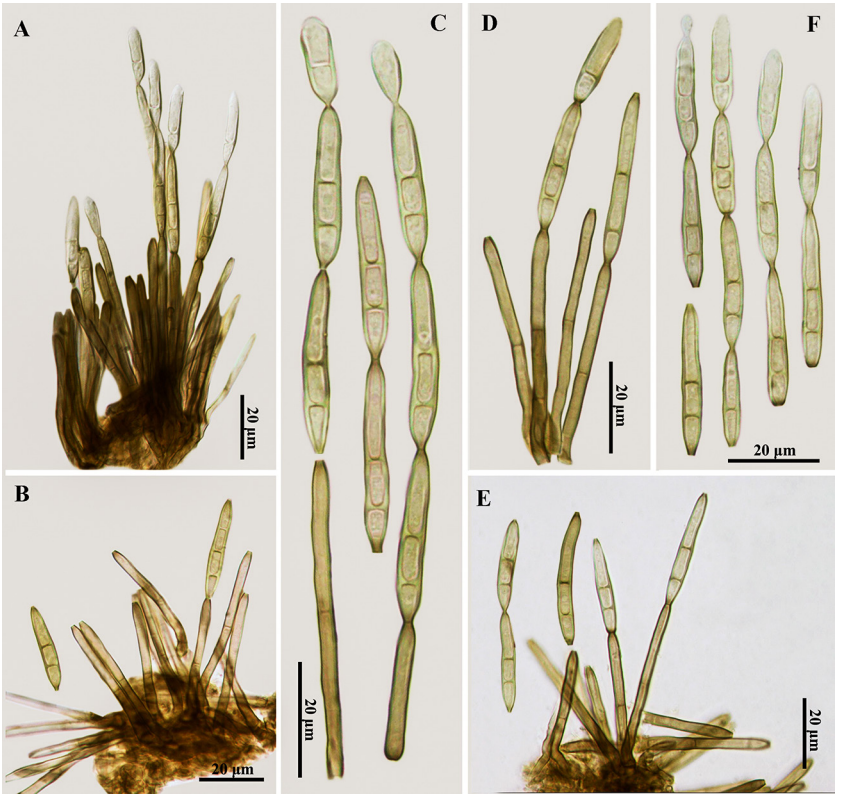

Fig. 1. *Lylea obclavata* (holotype, HJAUP M0451).
A–E. Conidiophores, conidiogenous cells, and conidia; F. Conidia.

Etymology: refers to the obclavate conidial shape.

Colonies on dead wood effuse, brown, hairy. Mycelium partly superficial, partly immersed in the substratum; hyphae branched, septate, pale brown, smooth-walled. Conidiophores macronematous, mononematous, unbranched, erect, cylindrical, 1–2-septate, smooth, pale brown to brown, 34–55 × 2.5–4 µm. Conidiogenous cells monoblastic, integrated, terminal, determinate, cylindrical, smooth, pale brown, 20–26 × 2.5–3.5 µm. Conidial secession schizolytic. Conidia acrogenous, in unbranched acropetal chains, dry, straight to slightly curved, obclavate, with truncate ends, 2(rarely 1)-distoseptate, pale brown, smooth-walled, 19–39 × 3.5–5 µm; 0.8–1.3 µm diam. at the truncate base, slightly melanized.

Table 1. Synoptic table for comparison of *Lylea* species. The new species is set in bold font.

Species	Conidiophores (μm)	Shape	Size (μm)	Septa	Color	branched chains
L. catenulata [1]	---	Cylindrical, obtuse at each end	40–67 × 7–9	(1)4–7(11)	Mid-brown to dark brown	Yes
L. ficus [2]	44–60 × 2.5–3	Fusiform to cylindrical	14–24.5 × 5.5–7	2(–3)	Pale brown	No
L. indica [3]	24–65 × 1.5–2	Cylindrical to fusiform	10–35.5 × 5.5–11.5	3–7	Mid-brown to brown	No
L. obclavata	**34–55 × 2.5–4**	**Obclavate**	**19–39 × 3.5–5**	**(1–)2**	**Pale brown**	**No**
L. palmicola [4]	4–8 × 3–3.5	Cylindrical, ellipsoidal, or fusiform with truncate ends	6–18 × 2.5–4	0–4(3)	Mid-brown to golden brown	No
L. rhopalostylidis [5]	≤90 × 4.5–6	Cylindrical or obclavate, base truncate, apex broadly rounded	30–45 × 5.5–9	(2–)4–6(–10)	Brown	No
L. tetracoila [6]	25–65 × 2.5–3.5	Elongate fusiform or cylindrical	20–40 × 4–5.5	2–4 (mostly 3)	Pale olivaceous brown	Yes

Data from [1] Morgan-Jones 1975; [2] Xia & al. 2014; [3] Karandikar & Singh 2010; [4] Mercado-Sierra & al. 1997; [5] Mckenzie 2009; [6] Holubová-Jechová 1978.

Discussion

Within *Lylea*, *L. obclavata* is most similar to *L. ficus* in having predominately 2-distoseptate conidia, but *L. ficus* has fusiform to cylindrical, shorter, and wider conidia (Xia & al. 2014). *Lylea obclavata* also differs from the other five species (*L. catenulata*, *L. indica*, *L. palmicola*, *L. rhopalostylidis*, and *L. tetracoila*) by producing obclavate conidia with fewer distosepta. Other differences from *L. obclavata* are larger conidia in branched acropetal chains in *L. catenulata*; wider, darker coloured conidia in *L. indica* and *L. rhopalostylidis*, smaller conidia with smooth to verruculose walls in *L. palmicola*, and predominately 3-distoseptate conidia in occasionally branched acropetal chains in *L. tetracoila* (Table 1). Only *L. tetracoila* was reported to have close associations with some pyrenomycetous fungi.

Key to *Lylea* species

1. Conidia with branched acropetal chains 2
1. Conidia without branched acropetal chains 3
2. Conidia 40–67 × 7–9 µm, 4–7-distoseptate . . . . . *L. catenulata*
2. Conidia 20–40 × 4–5.5 µm, predominately 3-distoseptate . . . . . *L. tetracoila*
3. Conidia smooth to verruculose . . . . . *L. palmicola*
3. Conidia smooth 4
4. Conidia predominantly 2-distoseptate 5
4. Conidia predominantly ≥3-distoseptate 6
5. Conidia fusiform to cylindrical, 14–24.5 × 5.5–7 µm . . . . . *L. ficus*
5. Conidia obclavate, 19–39 × 3.5–5 µm . . . . . *L. obclavata*
6. Conidia cylindrical to fusiform,
   10–35.5 ×5.5–11.5 µm, 3–7-distoseptate . . . . . *L. indica*
6. Conidia cylindrical or obclavate,
   30–45 × 5.5–9 µm, 4–6-distoseptate . . . . . *L. rhopalostylidis*

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